

ABSTRACT OF THE DISCLOSURE

An arrayed waveguide element having flat optical frequency characteristics, and an optical communication system using such arrayed waveguide element are realized by providing the arrayed waveguide element that is prepared by forming an inputting channel waveguide as well as an outputting channel waveguide, a channel waveguide array, a first sector form slab waveguide for connecting the inputting channel waveguide with the channel waveguide array, and a second sector form slab waveguide for connecting the outputting channel waveguide with the channel waveguide array on a substrate.

A waveguide part wherein the outputting channel waveguide is connected with the second sector form slab waveguide is defined in a parabolic configuration, whereby flat optical frequency characteristics are realized. Furthermore, it is possible that an individual parabolic configuration is adjusted in response to a wavelength, so that it can cope with a trend of broad band in optical signals.